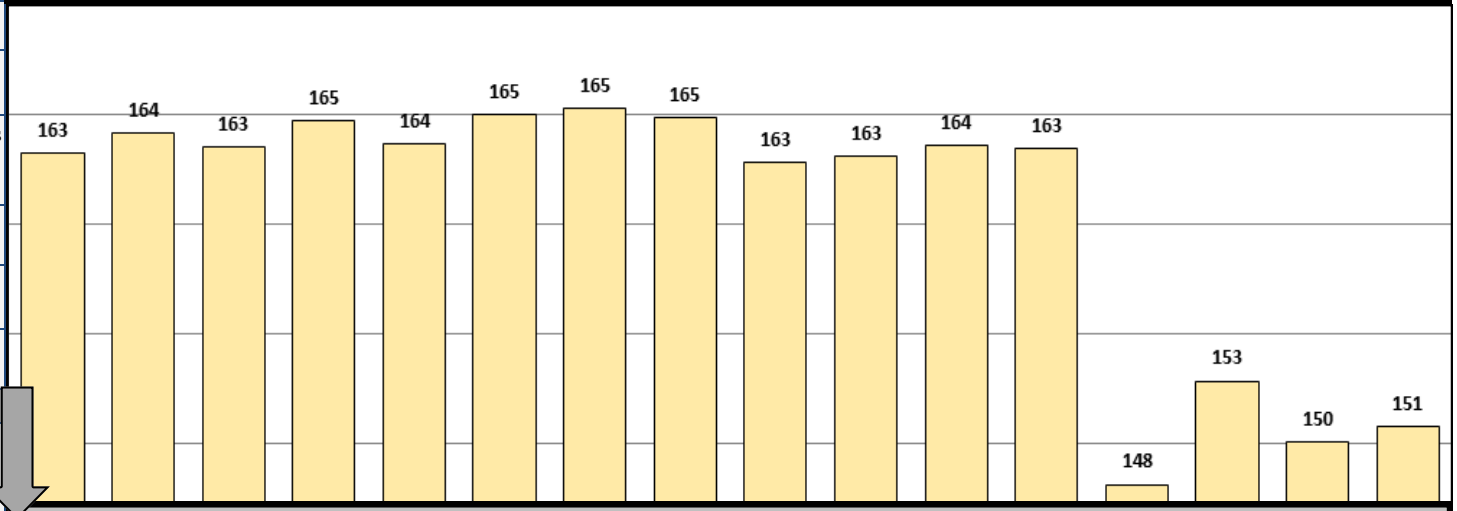
National Assessment of Educational Progress (NAEP)- Instructional Time

300	
215	**Advanced**
175	Draw a conclusion about soil permeability using data—Partial (CR)
174	Describe the competition between two species—Complete (CR)
171	Identify a function of a human organ system (MC)
170	**Proficient**
167	Describe the evidence for chemical
165	Describe the energy transfer between two systems—Complete (CR)
162	Read a motion graph (MC)
157	Draw a conclusion based on fossil evidence (MC)
156	Select and explain the useful properties of a material used in an industrial process—Partial (CR)
153	Predict a geological consequence of tectonic plate movement (MC)
151	Identify the mechanism of a weather pattern (MC)
148	Recognize a factor that affects the success of a species (MC)
141	**Basic**
136	Identify the sequence of formation of the Earth's features (MC)
134	Identify an example of kinetic energy (MC)
131	Predict the effect of an environmental change on an organism (MC)
128	Explain an experimental setup to study populations of organisms (MC)
127	Recognize how plants use sunlight (MC)
122	Explain the effects of human land use on wildlife—Partial (CR)
0	

8th Grade NAEP Science Findings in Montana

8th grade students should be able to demonstrate relationships among closely related science principles. Identify evidence of chemical changes; explain and predict motions of objects using position time graphs; explain metabolism, growth, and reproduction in cells, organisms, and ecosystems; use observations of the Sun, Earth, and Moon to explain visible motions in the sky; and predict surface and ground water movements in different regions of the world. Explain and predict observations of phenomena at multiple scales, from microscopic to macroscopic and local to global, and to suggest examples of observations that illustrate a science principle. Use evidence from investigations in arguments that accept, revise, or reject scientific models. Use scientific criteria to propose and critique alternative individual and local community responses to design problems.



8th grade students should be able to state or recognize correct science principles. Explain and predict observations of natural phenomena at multiple scales, from microscopic to global. Describe properties and common physical and chemical changes in materials; describe changes in potential and kinetic energy of moving objects; describe levels of organization of living systems—cells, multicellular organisms, and ecosystems; identify related organisms based on hereditary traits; describe a model of the solar system; and describe the processes of the water cycle. Design observational and experimental investigations employing appropriate tools for measuring variables. Propose and critique the scientific validity of alternative individual and local community responses to design problems.

☐ Gr 08 - 2011 - MT - Instructional Time

NOTE: The NAEP Science scale ranges from 0 to 300. Detail may not sum to totals because of rounding. Some apparent differences between estimates may not be statistically significant. **SOURCE**: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, National Assessment of Educational Progress (NAEP), 2011 Science Assessment.

Retrieved from http://nces.ed.gov/nationsreportcard/naepdata/dataset.aspx

National Assessment of Educational Progress (NAEP)- Emphasis on...

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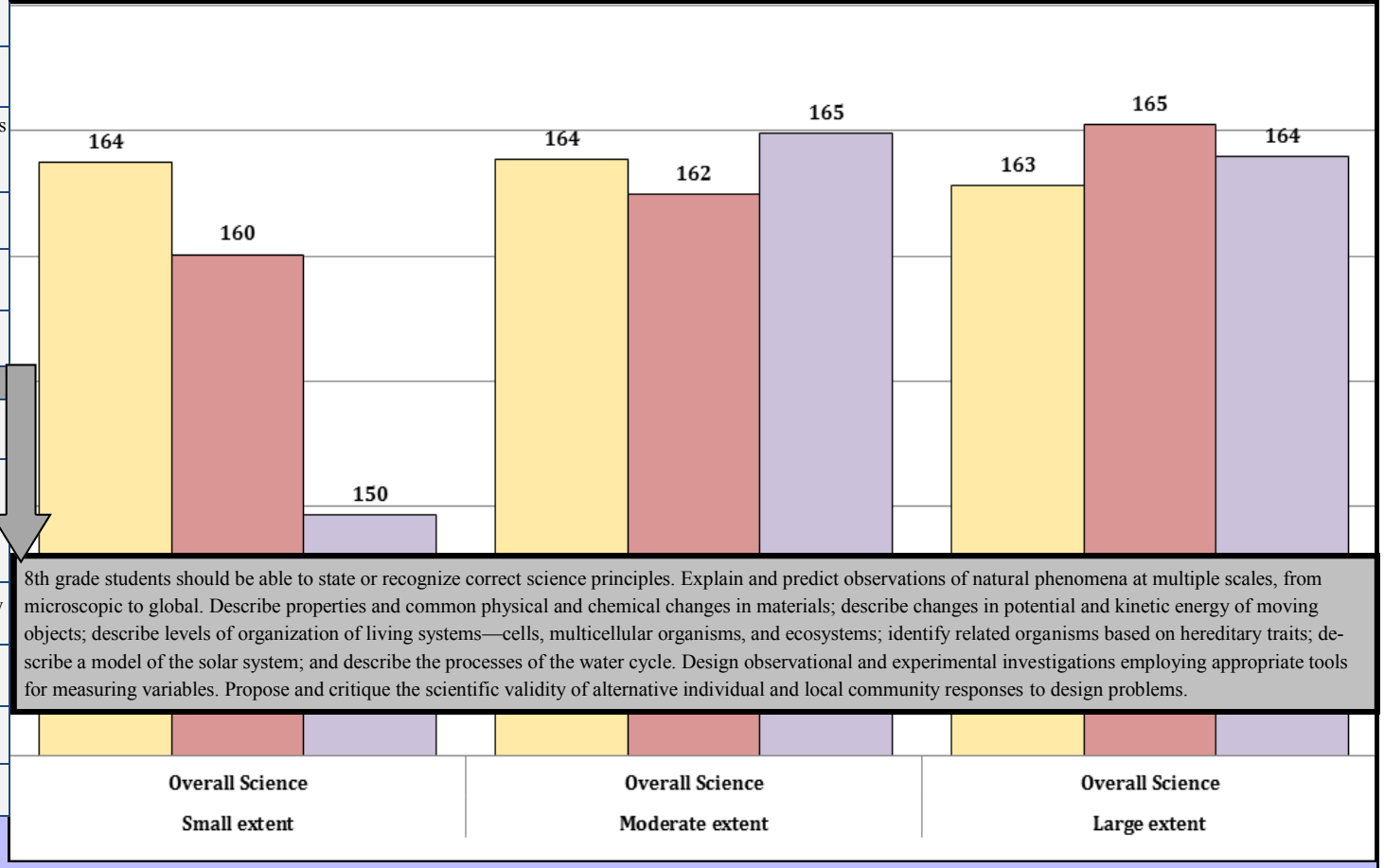

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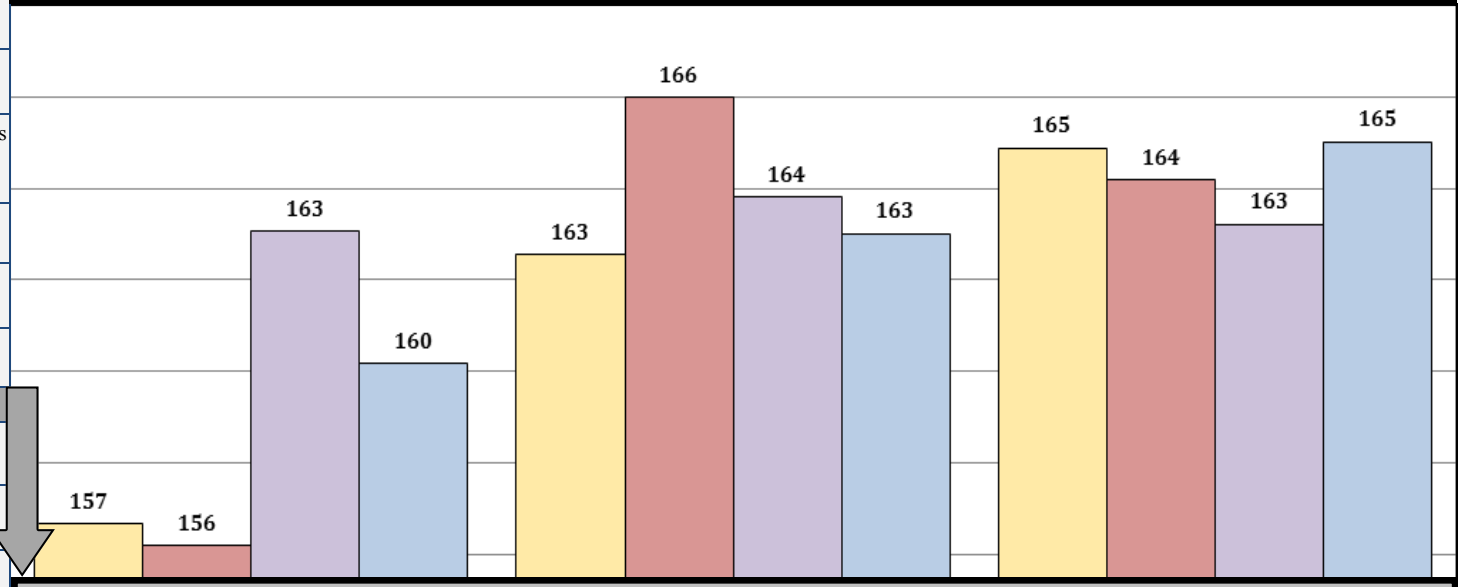

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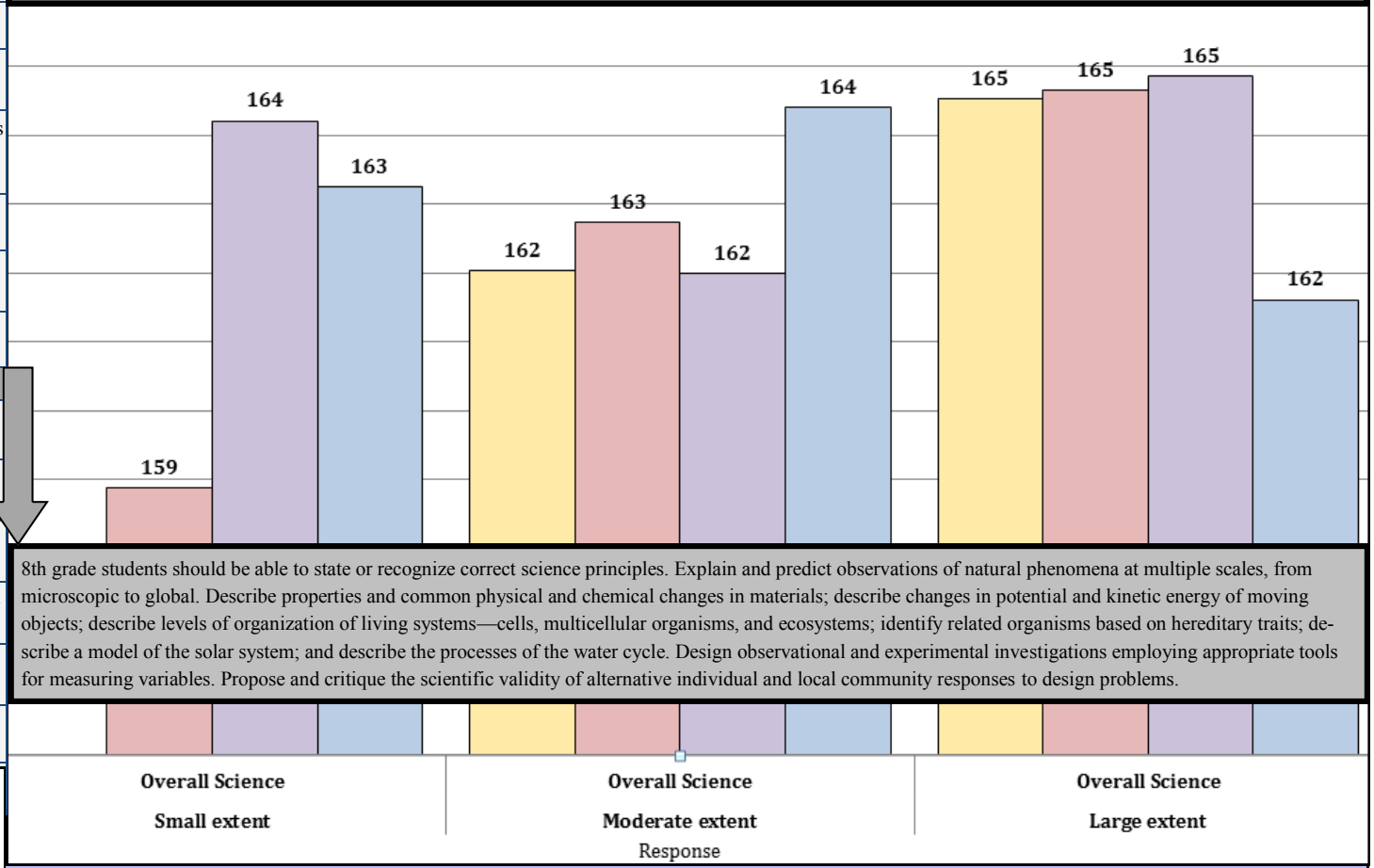

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National Assessment of Educational Progress (NAEP)- Program Structured to...

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8th Grade NAEP Science Findings in Montana

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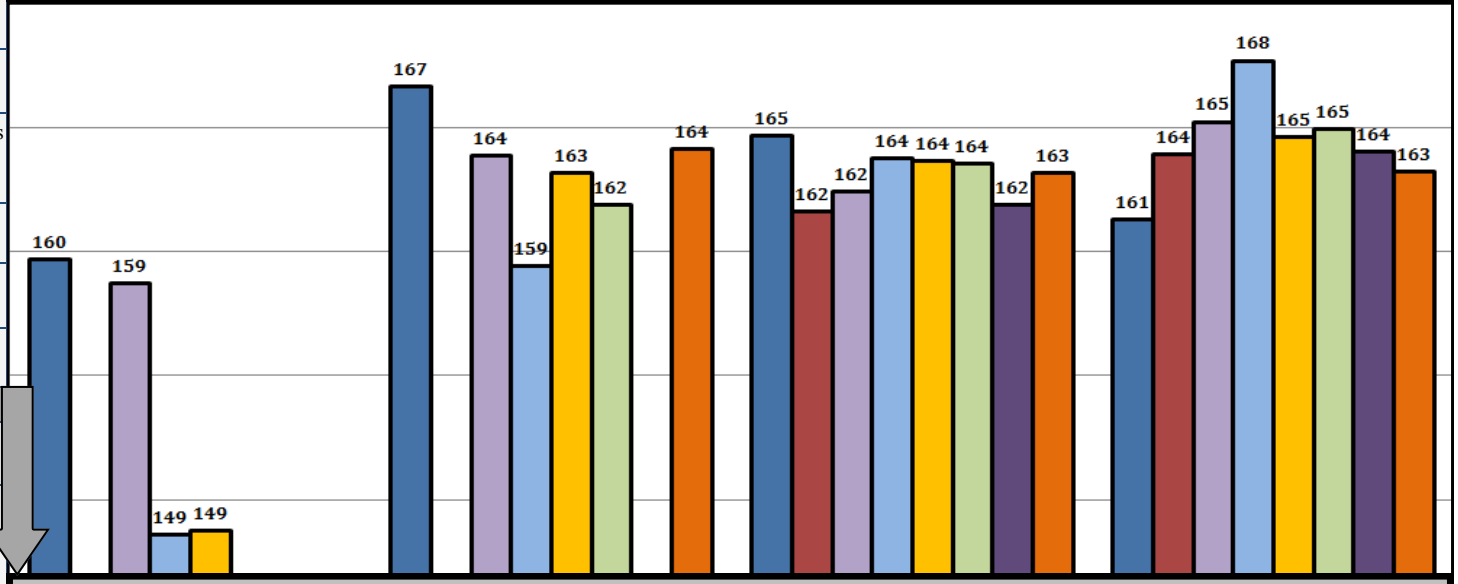

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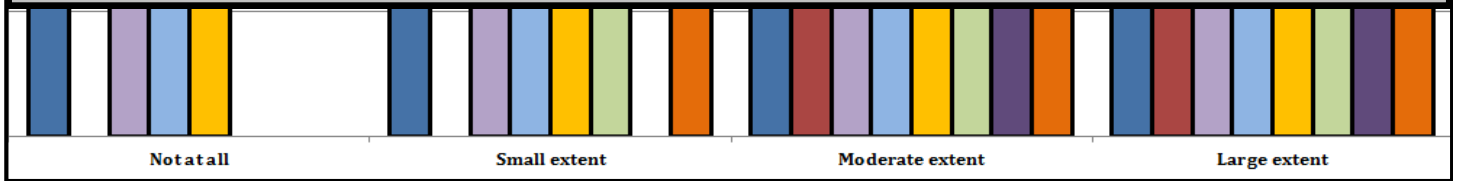

- Gr 08 - 2011 - MT - Program Structured to Commercial Programs
- Gr 08 - 2011 - MT - Program Structured to District Standards
- Gr 08 - 2011 - MT - Program Structured to Teacher Discretion
- Gr 08 - 2011 - MT - Program Structured to Department
- Gr 08 - 2011 - MT - Program Structured to In-school Standards
- Gr 08 - 2011 - MT - Program Structured to School Assessment Results
- Gr 08 - 2011 - MT - Program Structured to State Standards
- Gr 08 - 2011 - MT - Program Structured to State/District Assessment Results

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National Assessment of Educational Progress (NAEP)

http://nces.ed.gov/nationsreportcard/itemmaps/index.asp

2011 Grade 8 — **NAEP Science Scale**

Content Classifications:
● Earth & Space Sciences ■ Physical Science ▲ Life Science

300

290
- ● 287 Predict and explain a weather pattern due to collision of air masses—Complete (CR)

280

270
- ■ 269 Describe the evidence for chemical change—Complete (CR)
- ■ 266 Identify chemically similar elements in the Periodic Table (MC)
- ▲ 264 Select and explain graph types and draw graphs from data that compare insect behaviors—Complete (CR)

260
- ● 256 Explain the formation of a rock based on its features—Complete (CR)

250
- ▲ 247 Form a conclusion based on data about the behavior of an organism—Complete (CR)

240
- ▲ 231 Select and explain graph types and draw graphs from data that compare insect behaviors—Essential (CR)

230
- ■ 224 Explain a change in energy due to friction (MC)
- ● 221 Draw a conclusion about soil permeability using data—Complete (CR)

220

215 *Advanced*
- ● 214 Explain the effects of human land use on wildlife—Complete (CR)
- ● 213 Predict a lunar phenomenon (MC)
- ● 213 Predict and explain a weather pattern due to collision of air masses—Partial (CR)

210
- ● 208 Explain the formation of a rock based on its features—Essential (CR)
- ■ 203 Select and explain the useful properties of a material used in an industrial process—Complete (CR)
- ● 201 Relate characteristics of air masses to global regions (MC)
- ▲ 200 Select and explain graph types and draw graphs from data that compare insect behaviors—Partial (CR)
- ▲ 200 Identify the main source of energy for certain organisms (MC)

200
- ■ 198 Identify the atomic components of the molecule (MC)
- ■ 195 Determine a controlled variable in a chemistry investigation (MC)
- ● 190 Identify a source of energy for Earth's water cycle (MC)

190
- ● 187 Predict the long-term pattern in the volcanic activity of a region (MC)
- ■ 184 Recognize an effect of electrical forces (MC)
- ● 184 Explain the formation of a rock based on its features—Partial (CR)
- ▲ 183 Recognize that plants produce their own food (MC)
- ■ 182 Select and explain the useful properties of a material used in an industrial process—Essential (CR)
- ▲ 180 Form a conclusion based on data about the behavior of an organism—Partial (CR)

180
- ● 175 Draw a conclusion about soil permeability using data—Partial (CR)
- ▲ 174 Describe the competition between two species—Complete (CR)
- ▲ 171 Identify a function of a human organ system (MC)
- ● 171 Investigate the magnetic properties of some common objects (MC)

170 *Proficient*

170
- ■ 167 Describe the evidence for chemical change—Partial (CR)
- ■ 165 Describe the energy transfer between two systems—Complete (CR)
- ■ 162 Read a motion graph (MC)

160
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141 *Basic*

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120

0

Content Classifications:
● Earth & Space Sciences ■ Physical Science ▲ Life Science

Blue highlight= hyperlink to NAEP released item